

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>8477</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/013293</b>	International filing date ( <i>day/month/year</i> ) <b>24.11.2004</b>	Priority date ( <i>day/month/year</i> ) <b>11.12.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>B29C47/08</b>		
Applicant <b>WINDMÖLLER &amp; HÖLSCHER KG</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of <u>9</u> sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> ( <i>sent to the applicant and to the International Bureau</i> ) a total of <u>3</u> sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> ( <i>sent to the International Bureau only</i> ) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input checked="" type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-7 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-9 \_\_\_\_\_ received by this Authority on 16.01.2006 with letter of 16.01.2006
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1/5-5/5 \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims		YES
	Claims	1-9	NO
Inventive step (IS)	Claims		YES
	Claims	1-9	NO
Industrial applicability (IA)	Claims	1-9	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)	<p>This report makes reference to the following documents:</p> <p>D1: US-A-3 802 670 (OKADA T, JA ET AL) 9 April 1974 (1974-04-09)</p> <p>D2: US 2004/223403 A1 (SCHUNK HOLDER e.a) 11 November 2004 (2004-11-11)</p> <p>D3: WO 2004/005005 A (SIEMENS AKTIENGESELLSCHAFT; SCHUNK, HOLGER; TSCHANter, ANDREAS; KRESS) 15 January 2004 (2004-01-15)</p> <p>D4: DE 103 29 035 A1 (BATTENFELD SERVICE GMBH) 27 January 2005</p> <p>The essential feature of the application is that the torque transmission point lies outside the rotor in the axial direction! This is the case in D1 (US-A-3 802 670) as well as in D2 and D4. In D3, the sleeve parts 5 and 6 lie (only) partially outside the rotor.</p> <p>- Since claim 1 of the application speaks (only in general terms) of drive motor (1), the fact that no electric motor is shown in</p>		

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	<p>D1 is obsolete.</p> <ul style="list-style-type: none"><li>- Since the extruder in D1 was mounted (not in a positively bonded manner), logically it can also be disassembled, or "detached". The issue of outlay is entirely different.</li><li>- It is very clear that in area 63, the end of the worm is encompassed by a rotor sleeve. Therefore, points 4 and 5 of the preamble HAVE been fulfilled.</li></ul> <p>1. Novelty</p> <p>1.1 Independent claim 1</p> <p>D1 (US-A-3 802 670), D4, and D3 in the broader sense (see above) are regarded as the prior art closest to the subject matter of claim 1. Figure 1 of D1, for example, discloses an extruder device ("continuous mixer for thermoplastic resin") with</p> <ul style="list-style-type: none"><li>- an extruder worm and</li><li>- a worm drive, which</li><li>- comprises a drive motor, which in turn</li><li>- has a rotor, which</li><li>- is connected to the extruder worm during operation in such a manner that during operation the rotor and the extruder worm rotate at the same speed and</li><li>- which can be connected (to the extruder worm) using detachable torque transmission elements</li></ul> <p style="padding-left: 40px;">that transmit torque between the rotor and the extruder worm and can be detached</p>

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	<p>during retrofitting,</p> <ul style="list-style-type: none"><li>- the detachable torque transmission elements comprise a torque transmission point at which torque is transmitted from a sleeve to a connecting section (of the worm) that is at least partially encompassed by the sleeve,</li><li>- the sleeve is attached on the front side of the rotor and</li><li>- the torque transmission point lies outside the rotor in the axial direction.</li></ul> <p>Since D1 and D4, as well as D3 in the broader sense (the connection for sleeve parts 5 and 6 is outside) disclose all of the features (in particular, the fact that the sleeve is fixed on a front side of the rotor), independent claim 1 is not regarded as novel pursuant to PCT Article 33(2).</p> <p>1.2    Dependent claims 2 to 8</p> <p>Dependent claims 2 to 8 all contain features that can be found, in the present form and/or in conjunction with the claimed subject matter for which protection is sought, in the available prior art. Therefore, pursuant to PCT Article 33(2), they cannot be regarded as novel.</p> <p>Claim 2: D1, figure 2b, part 10, and D4, figure 1, unlabeled part, show that the sleeve and the connecting section lie entirely outside the rotor. The fact that the</p>

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connecting part of the sleeve that is essential for disassembly lies outside the rotor is shown in D3, figure 1, parts 5 and 6.

Claim 3: D1, figure 1 and D2, figure 1 show that the torque transmission elements 63 are arranged between the rotor and the extruding worm.

Claim 4: D1, like D2, shows that the torque transmission elements comprise an axially extending screw connection 10 with which the sleeve and the connecting section are connected in a rotationally fixed manner.

Claim 5: D1 (figure 2b, part 10) shows that at least one of the torque transmission elements is at least partially encompassed by a housing that is fixedly connected to the extruder worm housing.

Claim 6: D1 shows that the drive motor housing is detachably connected to the housing, which at least partially surrounds the torque transmission elements.

Claim 7: D1 shows that at least one of the torque transmission elements is supported by the surrounding housing using rolling and/or ball bearings 33, 53, 57.

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	<p>Claim 8: D2 shows that the rolling bearing is an angular contact bearing 13 that can absorb axial forces. D3 shows that the angular contact bearings 8 are conventional in the field.</p> <p>Claim 9: D1 shows that this at least one torque transmission element is the sleeve.</p> <p>2. Inventive step</p> <p>2.1 Independent claim 1</p> <p>Since the features of claim 1 still fail to be regarded as novel, no examination has been carried out with respect to inventive step.</p> <p>2.2 Dependent claims 2 to 8</p> <p>Dependent claims 2 to 8 do not appear to contain any features that, in combination with the features of independent claim 1, disclose or suggest an inventive contribution. They appear to contain only simple design measures in relation to which it is not clear that or to what extent they involve an inventive step. Therefore, the claims do not meet the requirements of PCT Article 33(2) and (3) with respect to novelty or inventive step.</p> <p>3. Industrial applicability:</p> <p>3.1 Based on the evaluation thus far, there are</p>

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citations and explanations supporting such statement

no objections with respect to the industrial  
applicability of the subject matter of the  
present application.

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Box No. VI

Certain documents cited

## 1. Certain published documents (Rule 70.10)

Application No.  
Patent No.Publication date  
(day/month/year)Filing date  
(day/month/year)Priority date (valid claim)  
(day/month/year)

## 2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure

Date of non-written disclosure  
(day/month/year)Date of written disclosure  
referring to non-written disclosure  
(day/month/year)